

NYC Columbia University Green Roofs

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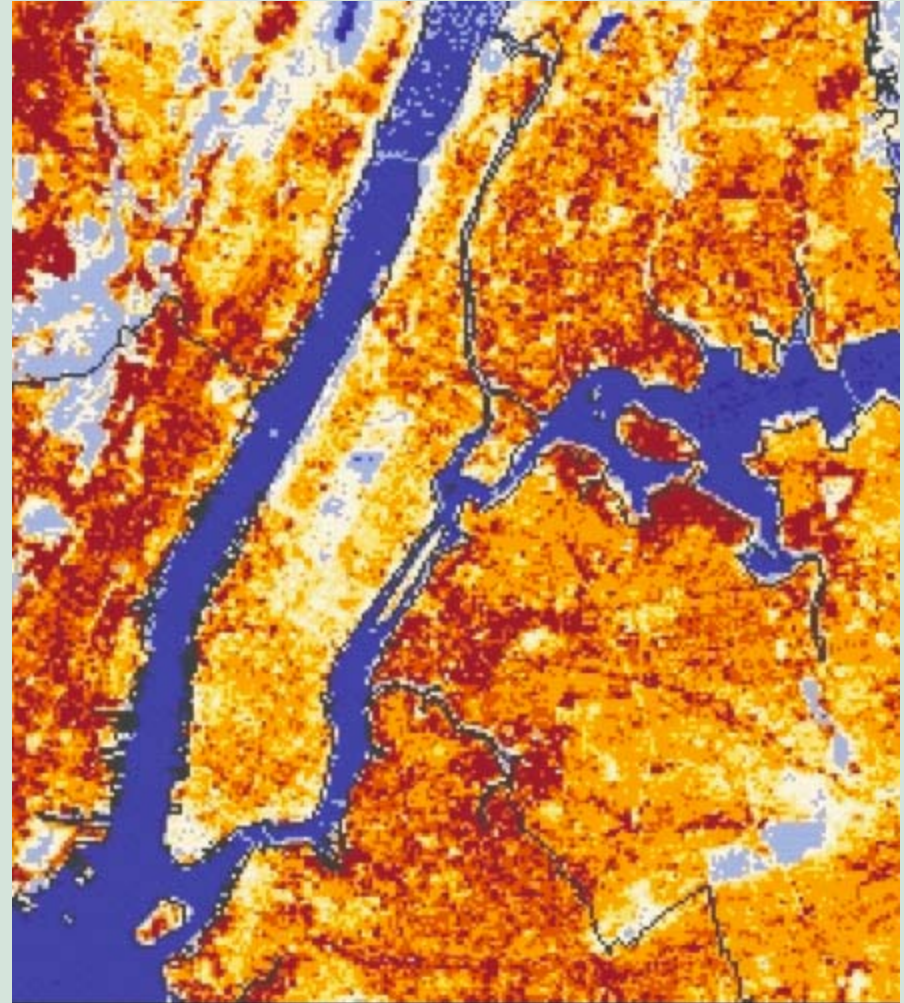
Internship of the Earth Institute Climate Change Adaptation Initiative

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Green Roof Adaptation Benefits

- **Urban Heat Island Mitigation**
 - Storm Water Management
 - Building Energy (thermal barrier)
 - Absorption/Pollutant Mitigation
 - Carbon Dioxide Sequestration
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- Education
 - Extend Roof Life Cycle
 - Reduce Noise Transfer
 - Living Habitat for Birds
 - Aesthetics



Surface temperature distribution in New York City (Rosenzweig 2006). Green surface areas have a noticeably lower temperature and mitigate the urban heat island (as much as 5 degrees).

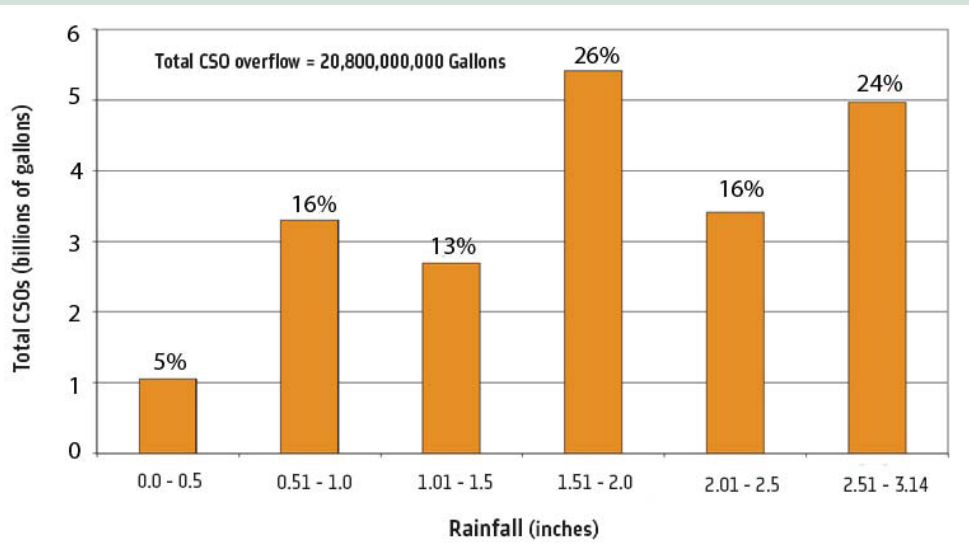
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- Combined sewer overflows (CSOs) discharge over 27 billion gallons of sewage and polluted rainwater annually into New York waters.

- More frequent and intense rainfall due to climate change will exacerbate the problem.

- Green roofs can function as stormwater catchment, reducing the total amount and rate of rainfall discharged to the sewer system as runoff.



NYC CSO following rain events (plaNYC 2008).